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| 09/988,343 | 11/19/2001 | Yoshitaka Sasaki | 111159 | 8520 |

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EXAMINER

KLIMOWICZ, WILLIAM JOSEPH

ART UNIT PAPER NUMBER

2652

DATE MAILED: 03/01/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,343

Applicant(s)

SASAKI ET AL.

Examiner

William J. Klimowicz

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 8, 10, 12, 14, 16, 17 and 19-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 11, 13, 15 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The copy of the IDS originally submitted on April 3, 2002 (Paper No. 6) has been fully considered. A copy of the initialed and signed PTO-1449 is enclosed herewith.

Claims Status

Claims 1-30 are currently pending.

Claims 8, 10, 12, 14, 16, 17 and 19-30 are currently withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

This application contains claims 8, 10, 12, 14, 16, 17 and 19-30 drawn to an invention nonelected with traverse in Paper No. 8. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoda (JP 08-045220 A).

As per claim 1, Yoda (JP 08-045220 A) discloses a slider (28) of a magnetic head comprising: a slider main body (28) having: a medium facing surface that faces toward a rotating recording medium (11); an air inflow end (31); and an air outflow end (33); and a magnetic head element (29) disposed near the air outflow end (33) and near the medium facing surface of the slider main body (28), wherein: the medium facing surface has: a first part (34) closer to the air outflow end (33); a second part (30 and 32) closer to the air inflow end (31); and a ridge line *(e.g., the ridge line formed at the intersection of surface (30) and surface (34) as is readily seen in, inter alia, FIGS. 3B and 7 of Yoda (JP 08-045220 A))* formed by the intersection of the first part (34) and the second part (30 and 32), the second part (30 and 32) being slanted against the first part (34).

As per claim 2, wherein the second part (30 and 32) slants against a surface of the recording medium (11) so that the air inflow end (31) gets farther from the recording medium

(11) than the ridge line (30) does, while the recording medium (11) is rotating.

As per claim 3, the second part (30 and 32) and the surface of the recording medium (11) form an angle of no greater than 30° while the recording medium (11) is rotating. Note that the claims are drawn to the slider, *per se* (see preamble of claim 1) and that the angle of both (32) and (30) relative to (30) is at most 0.83° such that when the slider flies above a disc, at least during a portion of the flight, the angle between (32) as well as flat portion (30) and the disk (11) remains around 0.83° much less than the claimed 30° . Thus, since the claim is drawn to the slider *per se*, and the slider-disc relationship is met by Yoda (JP 08-045220 A) for at least a part of the slider flying duration, the claim is anticipated.

As per claim 4, the slider main body (28) is in contact with a surface of the recording medium (11) while the recording medium (11) is at rest, and stays away from the surface of the recording medium (11) while the recording medium (11) is rotating - FIGS. 2, 3B, etc.

As per claim 5, when the slider main body (28) comes into contact with the surface of the recording medium (11), the ridge line (e.g., the ridge line formed at the intersection of surface (30) and surface (34)) is the first to make contact with the surface of the recording medium (11) - due to the incline at the rear as seen in FIG. 2.

As per claim 6, when the slider main body (28) takes off from the surface of the recording medium (11), the ridge line (e.g., the ridge line formed at the intersection of surface (30) and surface (34)) is the last to depart from the surface of the recording medium (11) - since it is the only part in contact with the disc (11) and the front end lifts first.

As per claim 7, the medium facing surface has a concavity/convexity (e.g., part (30))

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protrudes toward the disc surface (11) to form a convexity) for controlling orientation of the slider main body (28) during the rotation of the recording medium (11).

As per claim 9, wherein the first part (34) and the second part (32) form an angle of no greater than 30° . The angle of the first part (34) is 0.1° and that of the second part (32) is 0.83° .

As per claim 1, Yoda (JP 08-045220 A) does not expressly disclose wherein the head (29) is a thin-film magnetic head (and thus a thin film magnetic slider).

Official notice is taken that thin-film magnetic heads used in recording/reproducing apparatuses of the type disclosed by Yoda (JP 08-045220 A) are notoriously old and well known and ubiquitous in the art; such Officially noticed fact being capable of instant and unquestionable demonstration as being well-known.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the slider of Yoda (JP 08-045220 A) as being a thin-film magnetic head, as is known.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the slider of Yoda (JP 08-045220 A) as being a thin-film magnetic head, as is known, in order to provide a conventional thin-film magnetic slider with the advantages espoused by the slider structure of Yoda (JP 08-045220 A) (e.g., to prevent damage to the slider and improve reliability); additionally, it is well known that thin-film magnetic heads can be advantageously produced inexpensively in a batch-yield thin-film deposition process, thus increasing yield and reducing costs.

Claims 11, 13, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

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Yoda (JP 08-045220 A) in view of Applicants' admitted prior art (e.g., see page 1, line 12 through page 13, line 13 and FIGS. 34A-43 of Applicants' instant specification).

See the description of Yoda (JP 08-045220 A), *supra*.

Additionally, as per claim 18, Yoda (JP 08-045220 A) discloses wherein the length (LB) of a portion of the first part (34) in the direction of air passage, the portion belonging to a substrate portion, is equal to or less than 50% the length of the entire substrate portion (LA + (30) + LB) in the direction of air passage (FIG. 3A and 3B).

With regard to claim 11, Yoda (JP 08-045220 A) does not expressly disclose the structural characteristics of the slider detail, including wherein the slider main body includes: a substrate portion that has a surface facing toward the recording medium and makes a base of the thin-film magnetic head element; and an insulating portion that has a surface facing toward the recording medium and surrounds the thin-film magnetic head element.

With regard to claim 13, Yoda (JP 08-045220 A) does not expressly disclose the structural characteristics of the slider detail including wherein the slider main body further includes a protection layer that covers the surfaces of the substrate portion and the insulating portion facing toward the recording medium, wherein the protection layer is made of alumina or diamond-like carbon, as per claim 15.

Such slider structure and composition as set forth in claims 11, 13 and 15, however, are well known in the art, e.g., exemplified by the Applicants' admitted prior art.

More concretely, the Applicants' admitted prior art discloses a conventionally known

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slider wherein the slider main body includes: a substrate portion (101) that has a surface facing toward the recording medium and makes a base of a thin-film magnetic head element (122); and an insulating portion (127) that has a surface facing toward the recording medium and surrounds the thin-film magnetic head element (122) (as per claim 11); wherein the slider main body further includes a protection layer (128) that covers the surfaces of the substrate portion (101) and the insulating portion (127) facing toward a recording medium, wherein the protection layer (128) is made of alumina or diamond-like carbon, as per claim 15 (e.g., see Applicants' specification at page 8, lines 2-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the slider of Yoda (JP 08-045220 A) as including the base and insulating portions with a DLC protective coating, as is known in the art, exemplified by Applicants' admitted prior art.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the slider of Yoda (JP 08-045220 A) as including the base and insulating portions with a DLC protective coating, as is known in the art, exemplified by Applicants' admitted prior art, in order to provide a substrate that is easily processed with a protective insulating film covering the head and a protective film which minimizes wear to the slider-disc interface during start-up and powering down of a disc drive, as exemplified by Applicants' admitted prior art, as is well known in the art.

Response to Arguments

Applicants' arguments filed January 23, 2003 (Paper No. 10) have been fully considered but they are not persuasive.

The Applicants allege that Yoda (JP 08-045220 A) fails to disclose a ridge line formed by the intersection of the claimed first part and the claimed second part, wherein the second part is slanted against the first part.

The Examiner maintains that the Applicants' allegations are meritless based on the facts and evidence of record, particularly as disclosed by Yoda (JP 08-045220 A). More concretely, as broadly set forth in the claimed invention, Yoda (JP 08-045220 A) discloses a slider (28) of a magnetic head comprising: a slider main body (28) having: a medium facing surface that faces toward a rotating recording medium (11); an air inflow end (31); and an air outflow end (33); and a magnetic head element (29) disposed near the air outflow end (33) and near the medium facing surface of the slider main body (28), wherein: the medium facing surface has: a first part (34) closer to the air outflow end (33); a second part (30 and 32) closer to the air inflow end (31); and a ridge line (*e.g., the ridge line formed at the intersection of surface (30) and surface (34) as is readily seen in, inter alia, FIGS. 3B and 7 of Yoda (JP 08-045220 A)*) formed by the intersection of the first part (34) and the second part (30 and 32), the second part (30 and 32) being slanted against the first part (34).

Additionally, it is noted that the Applicants have not seasonably challenged the Examiner's position regarding the use of Official notice as taken in the previous Office action (Paper No. 9) by requesting "a demand for evidence."

As has been established in patent practice, as articulated in the MPEP § 2144.03:

If applicant does not seasonably traverse the well known statement during examination, then the object of the well known statement is taken to be admitted prior art. *In re Chevenard*, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged with rebutting the well known statement in the next reply after the Office action in which the well known statement was made. This is necessary because the examiner must be given the opportunity to provide evidence in the next Office action or explain why no evidence is required. If the examiner adds a reference to the rejection in the next action after applicant's rebuttal, the newly cited reference, if it is added merely as evidence of the prior well known statement, does not result in a new issue and thus the action can potentially be made final. If no amendments are made to the claims, the examiner must not rely on any other teachings in the reference if the rejection is made final.

Since the Applicants did not seasonably traverse the well known statement during examination, the object of the well known statement has been taken to be admitted prior art.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (703) 305-3452. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William J. Klimowicz
Primary Examiner
Art Unit 2652

WJK